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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/774,577

02/09/2004

Jennifer A. Coggan

8650.027 US

9765

30827 7590 10/17/2011
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EXAMINER

GARRETT, DAWN L

ART UNIT

PAPER NUMBER

1786

MAIL DATE

DELIVERY MODE

10/17/2011

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/774,577	Applicant(s) COGGAN ET AL.	
	Examiner Dawn L. Garrett	Art Unit 1786	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 August 2011.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on ____; the restriction requirement and election have been incorporated into this action.
- 4) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 5) ☒ Claim(s) 1-16 is/are pending in the application.
- 5a) Of the above claim(s) 8,9 and 12 is/are withdrawn from consideration.
- 6) ☐ Claim(s) ____ is/are allowed.
- 7) ☒ Claim(s) 1-9 and 14-16 is/are rejected.
- 8) ☒ Claim(s) 1,8 and 14 is/are objected to.
- 9) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 10) ☐ The specification is objected to by the Examiner.
- 11) ☒ The drawing(s) filed on 09 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 12) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Response to Amendment

1. This Office action is responsive to the amendment received August 3, 2011. Claims 1, 8, 9, and 14 were amended.
2. The species under consideration in the last Office action was the following: A 1,1'-binaphthyl derivative according to Formula I wherein R1 and R4 are hydrogen and R2 and R3 are an aryl or substituted aryl with about 6 to about 30 carbon atoms. Claims 1-9 and 13-16 read upon this species. Claims 10-12 were withdrawn as non-elected with respect to the current species under consideration.

Due to the amendment filed August 3, 2011, the last considered species wherein R1 and R4 are hydrogen and R2 and R3 when both aryl require specific unsubstituted groups at a specific position is considered to be allowable subject matter.

The examiner has selected the following species as the next species for consideration in this Office action:

A binaphthyl derivative according to Formula I wherein R1 and R4 are aryl and R2 and R3 are alkoxy. Claims 1-7, 10, 11, and 13-16 read upon this species. (Note: This derivative species corresponds to claim 10 Formula III when R7 and R8 are alkoxy and R2 and R3 are hydrogen.)

Claims 8, 9, and 12 are presently withdrawn as they require additional specific R5 and R6 substitution groups on the respective binaphthyl formulas which are outside the definition of the present species under consideration. Presently withdrawn claims 8, 9 and 12 have not been

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considered in terms of prior art in this Office action based upon the present species under consideration; however, informalities with claim 8 and the amendment filed 08/03/2011 have been addressed below.

3. The examiner notes that the recited groups "tolyl, naphthyl, anthryl, phenylanthryl, diphenylanthryl, biphenyl, perylene, furyl, thienyl, pyridyl, trimethylsilyl, and triphenylsilyl" added as a limitation to amended claims 1, 8, and 14 are interpreted as not having any further substitution groups on the groups or, in other words, they have been interpreted as unsubstituted groups.

4. The rejection of claim 9 under 35 U.S.C. 112, fourth paragraph set forth in the last Office action (mailed May 4, 2011) is withdrawn due to the amendment of claim 9.

5. The rejection of claims 1-8, 14 and 15 under 35 U.S.C. 102(b) as being anticipated by Azuma et al. (JP 2000-053677) is withdrawn due to the 08/03/2011 amendment.

6. The rejection of claims 1-3, 5-7, 14 and 15 under 35 U.S.C. 102(e) as being anticipated by Chen et al. (US 2004/0106003 A1) is withdrawn due to the 08/03/2011 amendment.

7. The rejection of claims 3 and 4 under 35 U.S.C. 103(a) as being unpatentable over Chen et al. (US 2004/0106003 A1) in view of Sato et al. (JP 11-302639 A) is withdrawn due to the 08/03/2011 amendment.

8. The rejection of claim 16 under 35 U.S.C. 103(a) as being unpatentable over Chen et al. (US 2004/0106003 A1) in view of Suzurisato et al. (JP 2002-324676) is withdrawn due to the 08/03/2011 amendment.

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9. The rejection of claim 16 under 35 U.S.C. 103(a) as being unpatentable over Azuma et al. (JP 2000-053677) in view of Suzurisato et al. (JP 2002-324676) is withdrawn due to the 08/03/2011 amendment.

Claim Objections

10. Claims 1, 8 and 14 are objected to because of the following informalities:

In the last line of page 4 of the claim set filed 08/03/2011, the phrase “trimethyl; diphenylmethyl, triphenyl” should be changed to “trimethyl, diphenylmethyl, or triphenyl” for the purpose of clarity.

In each of claims 1, 8 and 14, position “4,4 of formula I” should be “4, 4' of formula I”.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

11. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

12. Claims 1-9 and 14-16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Each of independent claims 1, 8, and 14 comprise the following added limitation (added in the claim amendment dated 08/03/2011):

“and wherein when R₁ and R₄ are both hydrogen and **R₂ and R₃ are both aryls**, the R₂ and R₃ are located at position 4,4 of formula I and are selected from the group consisting of tolyl,

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naphthyl, anthryl, phenylanthryl, diphenylanthryl, biphenyl, perylene, furyl, thienyl, pyridyl, trimethylsilyl and triphenylsilyl”.

The limitation is indefinite because it sets forth a proviso for when both R2 and R3 are aryl when R1 and R4 are hydrogen, but the recited groups include groups that are not aryl. Furyl, thienyl, and pyridyl are heteroaryl groups and trimethylsilyl and triphenylsilyl are groups connecting to the binaphthyl with a silicon atom. R2 and R3 cannot both be aryl and be selected from furyl, thienyl, pyridyl, trimethylsilyl or triphenylsilyl groups.

The dependent claims have been included with this rejection due to their respective dependencies upon claims 1, 8, and 14.

Claim Rejections - 35 USC § 102

13. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

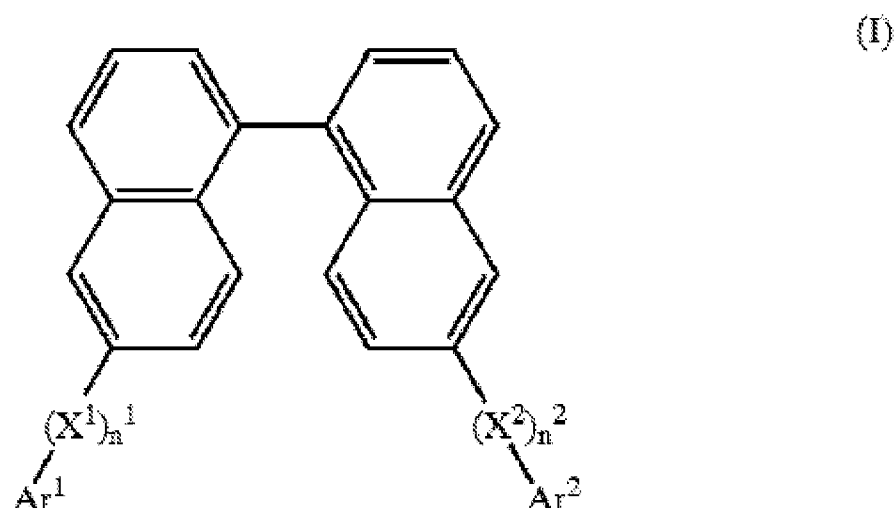
A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

14. Claims 1-7, 10, 11, and 13-15 are rejected under 35 U.S.C. 102(e) as being anticipated by Bazan et al. (US 2004/0142206 A1).

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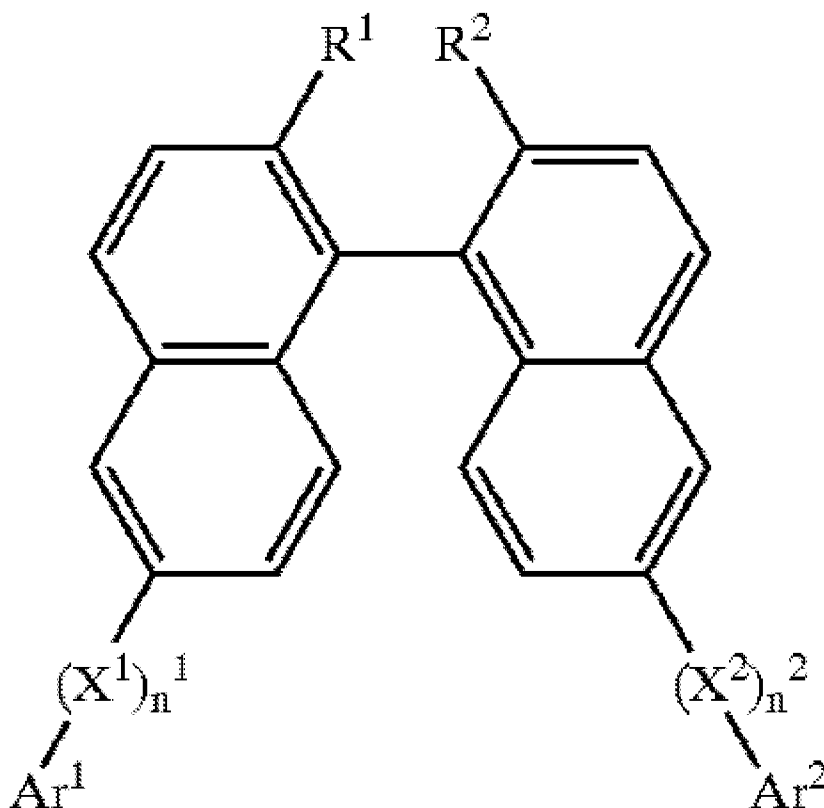
Bazan et al. discloses binaphthyl derivatives according to the following general formula:



(see par. 14). In the formula n_1 and n_2 may be 0 or 1 and Ar^1 and Ar^2 are aromatic hydrocarbon groups reading upon the instant “aryl” and “fused aromatic ring” groups for R_1 or R_4 . Specific Ar^1 and Ar^2 groups include among others aryl group phenyl and fused aromatic group perylene (see par. 28 and 29).

Preferably the binaphthyl derivative is the following and R_1 and R_2 are preferably alkoxy (see par. 33-37):

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Regarding claim 2, the binaphthyl compounds may be the host material in the light emitting layer (see par. 59). A variety of dopant dyes including fluorescent and phosphorescent dyes are suitable (see par. 60-61). The content of the dye is 0.1 to 30% by weight (see par. 62). A preferred device comprises a hole transporting layer (see par. 55) and an electron transporting layer (see 69-70). Regarding claim 13, Ar^1 and Ar^2 as phenyl are specifically described (see par. 28) and methoxy is specifically preferred for R^1 and R^2 for the above compound (see par. 34).

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Claim Rejections - 35 USC § 103

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

16. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bazan et al. (US 2004/0142206 A1). Bazan et al. is relied as set forth above for the rejection of claim 14.

Bazan et al. teaches a preferred anode is 10-500 nm (see par. 44), a preferred hole injection layer of phthalocyanine derivative (per the instant “buffer layer”) is 3-100 nm (see par. 50-54), a preferred hole transporting layer of amine compound is 10-100 nm (see par. 46 and 49), a preferred light emitting layer is 10-200 nm (see par. 64), and a preferred cathode comprises a thickness of 0.2 nm to 2 microns (see par. 62-68). While Bazan et al. does not appear to *exemplify* a device having a magnesium silver alloy or lithium aluminum alloy cathode (see Example 4, par. 88), Bazan et al. does teach these metals as suitable for forming an alloy for use as a cathode material (see par. 67). It would have been obvious to one of ordinary skill in the art at the time of the invention to have formed the Bazan et al. device having EL device functional layers as required and including a cathode material as required and to have expected the predictable result of light emission from the device, because one would expect the layers and materials taught by Bazan et al. to provide the needed functions for an EL device to efficiently emit light.

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Allowable Subject Matter

17. Regarding the species considered in the May 4, 2011 Office action:

When the binaphthyl derivatives comprise specifically in the 4, 4' positions of the recited unsubstituted aryl groups phenyl, tolyl, naphthyl, anthryl, phenylanthryl, diphenylanthryl, or biphenyl and comprise only hydrogen for the remainder of the substituents, the specific derivatives are considered to comprise allowable subject matter.

Allowable subject matter has been previously discussed in the prior office actions based upon previously considered species; please see prior Office actions. No claims are directed solely to those allowable species, so no claims are currently indicated as allowed.

Response to Arguments

18. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

19. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

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will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

20. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dawn Garrett whose telephone number is (571)272-1523. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jennifer Chriss can be reached on (571) 272-7783. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Dawn Garrett/
Primary Examiner, Art Unit 1786

October 11, 2011